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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,669	12/04/2003	Akihiro Kotsugai	246154US0	5843

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EXAMINER

NOTE, JANIS L

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/726,669

Applicant(s)

KOTSUGAI ET AL.

PA

Examiner

Janis L. Dote

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 2, 10-22, 25, 26 and 29 is/are allowed.
- 6) ☒ Claim(s) 3-9, 23, 24, 27 and 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/11/04; 06/06/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. The US patents listed on the "List of related cases" in the Information Disclosure Statements (IDS) filed on Feb. 11, 2004, have been crossed out by the examiner because the references are already listed on the forms PTO-1449 filed on Feb. 11, 2004.

The examiner has considered only the material submitted by applicants, i.e., copies of the originally filed claims, abstracts, and figures of the US applications listed in the "List of related cases" filed in the IDS on Feb. 11, 2004, and in the IDS filed on Jun. 16, 2004.

2. The disclosure is objected to because of the following informalities:

(1) There appear to be typographic errors throughout the specification. For example, at page 7, line 23, the term "monofuncitnal" in the phrase "[t]he monofuncitnal or bifunctional silane compound" (emphasis added). This example is not exhaustive. Applicants should review the entire specification to correct the typographic or spelling errors.

(2) The oxygen double-bonded to the nitrogen atom, i.e., " $-\text{CH}_2-(\text{N}(=\text{O})(-\text{CH}_2\text{O}(\text{CH}_2)_n\text{CH}_3))-\underline{\text{C}}-\text{CH}_2-$ " (emphasis added), Formula I should be double-bonded to the underlined carbon atom adjacent to the nitrogen atom. See page 8, line 6, and page 15, line 10.

Appropriate correction is required.

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3. The following is a quotation of the second paragraph of 35

U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 3-9, 23, 24, 27, and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 is indefinite in the phrase "silicone compound having at least one of a hydrolyzable group and a group capable of crosslinking upon polycondensation" (emphasis added) because it is not clear whether the claim requires that the silicone compound comprises only one of the groups or a combination of both groups.

Claim 4 is indefinite in the phrase "selected from the group consisting of an aminosilane coupling agent, and a monofunctional or bifunctional silane compound" (emphasis added) for improper Markush language. Proper Markush language is "R is selected from the group consisting of . . . and . . ." or "R is . . . or . . ." MPEP 2173.05(h). Applicants are using a combination of both phrases. Thus, it is not clear what is the scope of the instant claim.

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Claim 4 is also indefinite in the phrase "having at least one of a terminal group represented by formula . . . and a terminal phenyl group" (emphasis added) because it is not clear whether the claim requires that the silane compound comprises only one of the groups or a combination of both groups.

Claim 5 is indefinite in the phrase "silane compound has at least one of a hydroxyl group, a methoxy group, and an ethoxy group" (emphasis added) because it is not clear whether the claim requires that the silane compound comprises only one of the groups or a combination of all three groups.

Claim 7 is indefinite in the Formula 1 because the formula does not represent a polyamide. The nitrogen atom is pentavalent, not trivalent. The oxygen atom is double-bonded to the nitrogen atom, i.e., " $-\text{CH}_2-(\text{N}(=\text{O})(-\text{CH}_2\text{O}(\text{CH}_2)_n\text{CH}_3))-\underline{\text{C}}-\text{CH}_2-$ " (emphasis added).

Claim 23 is indefinite in the phrase "metal oxide particles comprise at least one of silicon oxide, titanium oxide and aluminum oxide" (emphasis added) because it is not clear whether the claim requires that the metal oxide particles comprise only one of the named oxides or a combination of all three named oxides. Furthermore, silicon oxide does not comprise a metal or a metal oxide. Silicon is a non-metallic element of the carbon

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group. See Grant & Hackh's Chemical Dictionary, 5th edition, page 531.

Claim 27 is indefinite in the phrase "at least one of a latent electrostatic image bearing member, a charging unit . . . and a blade" (emphasis added) because it is not clear whether the claim requires that the process cartridge comprises only one of the components or a combination of all three components.

Claim 28 is indefinite in the phrase "an espousing unit configured to applying the latent electrostatic image bearing member with light imagewise to form a latent image" (emphasis added). The term "espousing" usually is defined as taking a spouse, esp. as a wife, marrying. See Webster's New World Dictionary, 3rd College Edition, p. 464. It is not clear how a "espousing," i.e., marrying, unit applies an imagewise light to form an electrostatic latent image.

5. Claims 1, 2, 10-22, 25, 26, and 29 are allowable over the prior art of record.

Claims 3-9, 23, 24, 27, and 28 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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US 6,472,118 B1 (Yamaguchi) teaches a carrier comprising a magnetic particle coated with a silicone resin. See carrier preparation example 1 at cols. 9-10. The Yamaguchi carrier has a weight average particle diameter D_w of $36.3 \mu\text{m}$, a number average particle diameter D_p of $29.3 \mu\text{m}$, and a ratio of D_w/D_p of 1.24. The carrier comprises 81.7 wt% of particles having a diameter of $44 \mu\text{m}$ or less, and 2.6 wt% of particles having a particle size of less than $22 \mu\text{m}$. See Table 1-1 at col. 12, example 1. The carrier meets the particle size and particle size distribution limitations recited in instant claim 25. Yamaguchi further teaches that the magnetic particle equally can be coated with a polyamide resin or a mixture of a polyamide resin and a silicone resin. Col. 5, lines 10, 25-26, and 30-31. However, Yamaguchi does not teach or suggest that the carrier coating comprise "a condensation product of a composition comprising an alkoxyalkylated polyamide and a silicone resin that is reactive with the alkoxyalkylated polyamide," as recited in the instant claims.

US 6,500,594 B2 (Hamano) teaches a carrier comprising a magnetic particle coated with a nitrogen-containing resin and a resin comprising no nitrogen. Col. 14, lines 35-38; and col. 14, lines 46-50. Hamano discloses that the nitrogen-containing

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resin can be a polyamide, for example nylon-5, nylon-6,6, nylon-6,10, nylon-11, and nylon-12. Col. 15, lines 37-40. In addition, according to Hamano, "polyamide resins having hydrogen atoms of a part or all amide bonds having been subjected to alkoxyalkylation are commercially available for enabling solubility in an alcohol, but these are not preferred since the heat resistance, the film strength and the charging characteristics are poor." Col. 15, lines 40-45. Hamano does not disclose or suggest that the nitrogen-containing resin can be "a condensation product of a composition comprising an alkoxyalkylated polyamide and a silicone resin that is reactive with the alkoxyalkylated polyamide," as recited in the instant claims.

Japanese Patent 04-188160 A (JP'160) discloses a carrier comprising a magnetic particle coated with a crosslinked alkoxyalkylated polyamide resin. The crosslinked alkoxyalkylated polyamide resin coating is obtained by coating the magnetic particle with a solution comprising methoxymethylated nylon 6 and citric acid. See the DERWENT abstract Acc. No. 1992-274219. Based on the evidence in the present record, JP'160 does not appear to disclose or suggest that its coating composition can further comprise a "silicone resin that is reactive" to the alkoxyalkylated nylon 6, such

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that the coating composition forms a condensation product, as recited in the instant claims. Accordingly, JP'160 does not teach or suggest a carrier as recited in the instant claims.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The central fax phone number is (703) 872-9306.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLD

Nov. 30, 2004

Janis L. Dote
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GROUP 1500
1700